CLAIMS:

1.   Method for decoding of data, the method comprising the steps of:
receiving an initial transmission and at least one retransmission of data from a
transmitting station in a receiving station; wherein a decoding of the initial transmission
of the data results in a first decoding result and a decoding of the at least one

5   retransmission of the data results in at least one second decoding result; combining
selected ones of the first and at least one second decoding results into a combined
decoding result for reconstructing the data.

2.   The method of claim 1, wherein the data is transmitted as a data packet;

10   wherein all sub-combinations of the first and at least one second decoding results are
used for reconstructing the data; wherein each sub-combination of the first and at least
one second decoding results results in a respective combined decoding result.

3.   The method of claim 1, wherein the data is transmitted as a data packet;

15   wherein at least one sub-combination of the first and at least one second decoding
results is used for reconstructing the data; wherein each at least one sub-combination of
the first and at least one second decoding results results in a respective combined
decoding result.

20   4.   The method of claim 3, wherein a limited number of the first and at least
one second decoding results is combined into a combined decoding result for
reconstructing the data.

5.   The method of claim 3, wherein an estimation is performed which one of

25   the first decoding result, the at least one second decoding result, and the at least one
combined decoding result contains the lowest number of uncorrectable errors;

discarding decoding results or combined decoding results, for which a higher number of uncorrectable errors is estimated.

6.   The method of claim 3, wherein among the at least one second decoding
5   result there is a third decoding result, wherein the third decoding result is the decoding
result of the latest retransmission of the data packet; wherein, if there is no
uncorrectable error found in the third decoding result or in a combined decoding result,
the third decoding result or the combined decoding result in which there is no
uncorrectable error found is considered to represent an error free version of the data
10   packet and no further combination of decoding results, , and retransmission of the data
packet are performed; and wherein, if there is a number of uncorrectable errors found in
the third decoding result and in each of the at least one combined decoding results, the
third decoding result and the at least one combined decoding result are considered to
represent erroneous versions of the data packet and one or more further combinations of
15   decoding results or retransmissions of the data packet are performed.

7.   The method of claim 3, wherein the first and at least one second
decoding results are represented in form of respective soft bit vectors; and wherein a
combination of selected ones of the first and the at least one second decoding results is
20   performed by summing up the respective soft bit vectors of the first and the at least one
second decoding results resulting in a new soft bit vector representing the combination
of the selected ones of the first and the at least one second decoding results.

8.   The method of claim 3, wherein the estimation of which one of at least
25   one of the considered decoding results and the combined decoding results contains the
lowest number of uncorrectable errors is performed by means of comparing sum metrics
of ultimate survivor paths, which are obtained for each one of the at least one of the
considered decoding results and the combined decoding results.

30   9.   The method of claim 3, wherein the method is an extension of one of the
Chase Combining type HARQ and the Incremental Redundancy type HARQ.

10.   Communication system for performing a decoding of data, comprising a
transmitting station and a receiving station, wherein the transmitting station is adapted
to perform an initial transmission and at least one retransmission of the data from the
5   transmitting station to the receiving station; wherein the receiving station is adapted to
receive the initial transmission and the at least one retransmission of data from the
transmitting station; wherein the receiving station is adapted to decode the initial
transmission of the data resulting in a first decoding result and to decode the at least one
retransmission of the data resulting in at least one second decoding result; wherein the
10   receiving station is adapted to combine selected ones of the first and at least one second
decoding results into a combined decoding result for reconstructing the data.

11.   Receiving station for a communication system for performing a decoding
of data, wherein the receiving station is adapted to receive an initial transmission and at
15   least one retransmission of data from the transmitting station; wherein the receiving
station is adapted to decode the initial transmission of the data resulting in a first
decoding result and to decode the at least one retransmission of the data resulting in at
least one second decoding result; wherein the receiving station is adapted to combine
selected ones of the first and at least one second decoding results into a combined
20   decoding result for reconstructing the data.